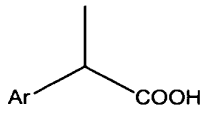
LISTING OF CLAIMS

This listing of claims will replace all prior versions of claims in the application.

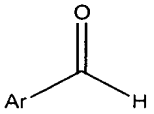
1. (previously presented) A method of producing a compound of the formula:



(IV)

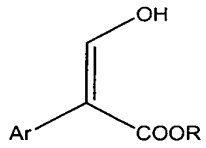
and its pharmaceutically acceptable salts, wherein Ar is a substituted or unsubstituted aromatic or heteroaromatic group; comprising:

(1) reacting a compound of the formula:



(I)

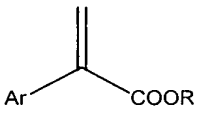
wherein Ar is as described above, with $N_2CHCOOR$, wherein R is alkyl, in the presence of a catalytic amount of a Bronsted acid or Lewis acid to form a compound of the formula:



(II)

wherein Ar and R are as described above;

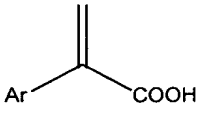
(2) reacting the compound of formula (II) with a reducing agent in the presence of an alkyl amine to form a compound of the formula:



(III)

wherein Ar and R are as described above;

(3) hydrolyzing the compound of formula (III) to a compound of the formula:



(X)

wherein Ar is as described above; and

(4) hydrogenating the compound of formula (X) to a compound of formula (IV) wherein Ar is as described above.

2. (currently amended) The method of claim 1 wherein Ar is selected from the group consisting of (a) a phenyl group; (b) a phenyl group substituted with one or more of alkyl, halogen, cycloalkyl, nitro, alkoxy, phenyl or substituted phenyl, alkylcarbonyl of one to ten carbon atoms, benzoyl or subsubstituted benzoyl, 1-oxo-isoindolyl, phenoxy or substituted phenoxy, azoline or thienylcarbonyl; (c) a naphthyl group; (d) a naphthyl group substituted with one or more of the substituents from (b) above; (e) a fluorenyl group; (f) a carbazoyl group; (g) a carbazoyl group substituted with one or more of the substituents from (b) above; (h) a thienyl group; (i) a thienyl group substituted with one or more of the substituents from (b) above; (j) a ~~pynoyl~~ pyrroyl group; (k) a pyrroyl group substituted with one or more of the substituents from (b) above; (l) a furyl group; and (m) a furyl group substituted with one or more of the substituents from (b) above.

3. (original) The method of claim 1 wherein Ar is selected from the group consisting of 6-methoxy-2-naphthalenyl, *p*-isobutylphenyl, *m*-benzoylphenyl, 2-fluoro-4-biphenyl, *m*-phenoxyphenyl, *p*-(1-oxo-2-isoindolinyl)-phenyl, fluorenyl, 6-chlorocarbazoyl, 3-chloro-4-(3-pyrrolin-1-yl)-phenyl, 5-benzoyl-2-thienyl, and *p*-2-thienoylphenyl.

4. (original) The method of claim 3 wherein the reducing agent is $BH_3 \cdot THF$.

5. (original) The method of claim 3 wherein the alkyl amine is a secondary amine.

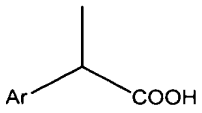
6. (original) The method of claim 3 wherein the secondary amine is selected from the group consisting of piperidine and oxazaborolidine and is present in an amount of from about 0.05 to 0.2 molar equivalents per equivalent of compound (II).

7. (original) The method of claim 3 wherein the Bronsted acid is HBF_4.

8. (original) The method of claim 3 wherein the Lewis acid is an iron Lewis acid.

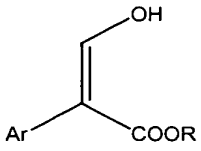
9. (original) The method of claim 8 wherein the iron Lewis acid is $[CpFe(CO)_2(THF)]^+$

10. (previously presented) A method of producing a compound of the formula:



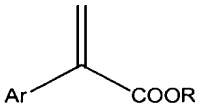
(IV)

and its pharmaceutically acceptable salts wherein Ar is a substituted or unsubstituted aromatic or heteroaromatic group, comprising reacting a compound of the formula:



(II)

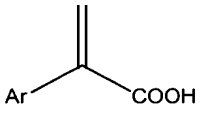
wherein Ar is as described above and R is alkyl with a reducing agent in the presence of alkyl amine to form a compound of the formula:



(III)

wherein Ar and R are as describe above;

hydrolyzing the compound of formula (III) to a compound of the formula:



(X)

wherein Ar is as described above; and

hydrogenating the compound of formula (X) to a compound of formula (IV) wherein Ar is as described above.

11. (currently amended) The method of claim 10 wherein Ar is selected from the group consisting of (a) a phenyl group; (b) a phenyl group substituted with one or more of alkyl, halogen, cycloalkyl, nitro, alkoxy, phenyl or substituted phenyl, alkylcarbonyl of one to ten carbon atoms, benzoyl or subsubstituted benzoyl, 1-oxo-isoindolyl, phenoxy or substituted phenoxy, azoline or thienylcarbonyl; (c) a naphthyl group; (d) a naphthyl group substituted with one or more of the substituents from (b) above; (e) a fluorenyl group; (f) a carbazoyl group; (g) a carbazoyl group substituted with one or more of the substituents from (b) above; (h) a thienyl group; (i) a thienyl group substituted with one or more of the substituents from (b) above; (j) a pyrrolyl group; (k) a pyrrolyl group substituted with one or more of the substituents from (b) above; ~~(i)~~ (l) a furyl group; and (m) a furyl group substituted with one or more of the substituents from (b) above.

12. (original) The method of claim 10 wherein Ar is selected from the group consisting of 6-methoxy-2-naphthalenyl, *p*-isobutylphenyl, *m*-benzoylphenyl, 2-fluoro-4-biphenyl, *m*-phenoxyphenyl, *p*-(1-oxo-2-isoindolinyl)-phenyl, fluorenyl, 6-chlorocarbazoyl, 3-chloro-4-(3-pyrrolin-1-yl)-phenyl, 5-benzoyl-2-thienyl, and *p*-2-thienoylphenyl.

13. (original) The method of claim 12 wherein the reducing agent is $BH_3 \cdot THF$.

14. (original) The method of claim 12 wherein the alkyl amine is a secondary amine.

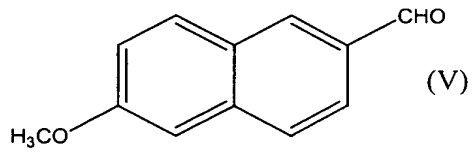
15. (original) The method of claim 12 wherein the secondary amine is selected from the group consisting of piperidine and oxazaborolidine and is present in an amount of from about 0.05 to about 0.2 molar equivalents per equivalent of compound (II).

16. (previously presented) The method of claim 1 wherein the Bronsted acid or Lewis acid is HBF_4.

17. (original) The method of claim 16 wherein Ar is selected from the group consisting of (a) a phenyl group; (b) a phenyl group substituted with one or more of alkyl, halogen, cycloalkyl, nitro, alkoxy, phenyl or substituted phenyl, alkylcarbonyl of one to ten carbon atoms, benzoyl or substituted benzoyl, 1-oxo-isoindolyl, phenoxy or substituted phenoxy, azoline or thienylcarbonyl; (c) a naphthyl group; (d) a naphthyl group substituted with one or more of the substituents from (b) above; (e) a fluorenyl group; (f) a carbazoyl group; (g) a carbazoyl group substituted with one or more of the substituents from (b) above; (h) a thienyl group; (i) a thienyl group substituted with one or more of the substituents from (b) above; (j) a pyrrolyl group; (k) a pyrrolyl group substituted with one or more of the substituents from (b) above; (l) a furyl group; and (m) a furyl group substituted with one or more of the substituents from (b) above.

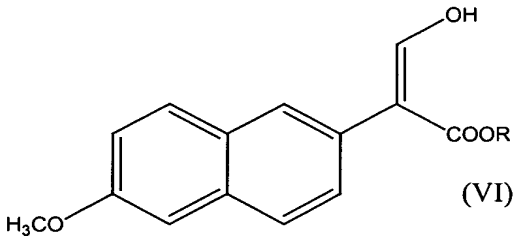
18. (original) The method of claim 16, wherein Ar is selected from the group consisting of 6-methoxy-2-naphthalenyl, *p*-isobutylphenyl, *m*-benzoylphenyl, 2-fluoro-4-biphenyl, *m*-phenoxyphenyl, *p*-(1-oxo-2-isoindolinyl)-phenyl, fluorenyl, 6-chlorocarbazoyl, 3-chloro-4-(3-pyrrolin-1-yl)-phenyl, 5-benzoyl-2-thienyl, and *p*-2-thienoylphenyl.

19. (previously presented) A method of producing naproxen and its pharmaceutically acceptable salts comprising: (1) reacting an aldehyde of the formula:



(V)

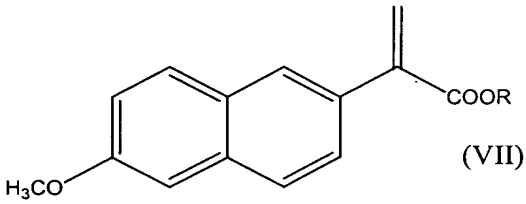
with $N_2CHCOOR$, wherein R is alkyl, in the presence of a Bronsted acid or a Lewis acid to produce a compound of the formula:



(VI)

wherein R is as described above;

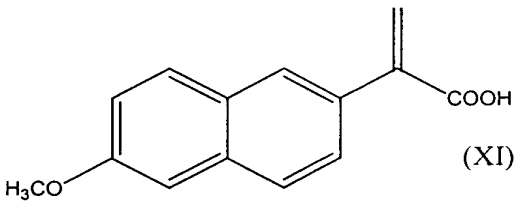
(2) reacting the compound of formula (VI) with a reducing agent in the presence of an alkyl amine to produce a compound of the formula:



(VII)

wherein R is as described above;

(3) hydrolyzing the compound of formula (VII) to a compound of the formula:



(XI)

and

(4) hydrogenating the compound of formula (XI) to naproxen or its pharmaceutically acceptable salts.

20. (original) The method of claim 19 wherein the reducing agent is $BH_3 \cdot THF$.

21. (original) The method of claim 19 wherein the alkyl amine is a secondary amine.

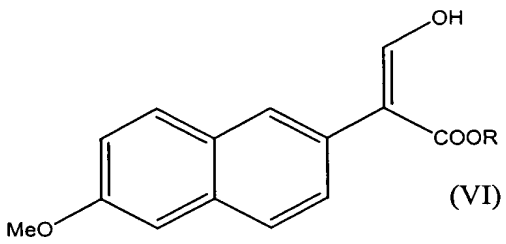
22. (original) The method of claim 19 wherein the secondary amine is selected from a group consisting of piperidine and oxazoboralidine and is present in an amount of from about 0.05 to about 0.2 molar equivalents per equivalent of compound (IV).

23. (original) The method of claim 19 wherein the Bronsted acid is HBF_4.

24. (original) The method of claim 19 wherein the Lewis acid is an iron Lewis acid.

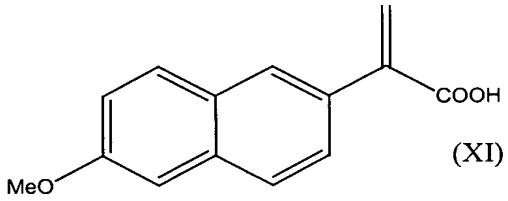
25. (previously presented) The method of claim 24 wherein the iron Lewis acid is $[CpFe(CO)_2(THF)]^+$.

26. (previously presented) A method of producing naproxen and its pharmaceutically acceptable salts comprising reacting a compound of the formula:



(VI)

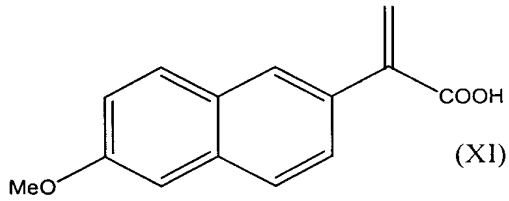
wherein R is alkyl with a reducing agent in the presence of an alkyl amine to produce a compound of the formula:



(XI)

wherein R is as described above,

hydrolyzing the compound of formula (VII) to a compound of the formula:



(XI)

and hydrogenating the compound of formula (XI) to naproxen or its pharmaceutically acceptable salts.

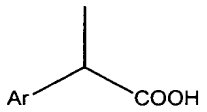
27. (original) The method of claim 26 wherein the reducing agent is $BH_3 \cdot THF$.

28. (original) The method of claim 26 wherein the alkyl amine is a secondary amine.

29. (original) The method of claim 26 wherein the secondary amine is selected from a group consisting of piperidine and oxazoboralidine and is present in an amount of from about 0.05 to about 0.2 molar equivalents per equivalent of compound (VI).

30. (previously presented) The method of claim 19 wherein the Bronsted acid or Lewis acid is HBF_4.

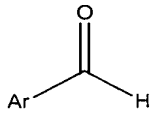
31. (previously presented) A method of producing a compound of the formula:



(IV)

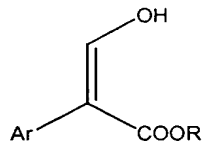
and its pharmaceutically acceptable salts, wherein Ar is a substituted or unsubstituted aromatic or heteroaromatic group; comprising:

(1) reacting a compound of the formula:



(I)

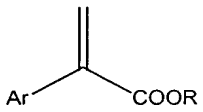
wherein Ar is as described above, with $N_2CHCOOR$, wherein R is alkyl, in the presence of a catalytic amount of a Bronsted acid or Lewis acid to form a compound of the formula:



(II)

wherein Ar and R are as described above;

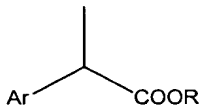
(2) reacting the compound of formula (II) with a reducing agent in the presence of an alkyl amine to form a compound of the formula:



(III)

wherein Ar and R are as described above;

(3) hydrogenating the compound of formula (III) to a compound of the formula

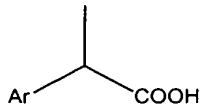


(XII)

wherein Ar and R are as described above; and

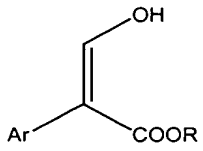
(4) hydrolyzing the compound of formula (XII) to a compound of formula (IV) wherein Ar is as described above.

32. (previously presented) A method of producing a compound of the formula:



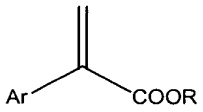
(IV)

and its pharmaceutically acceptable salts wherein Ar is a substituted or unsubstituted aromatic or heteroaromatic group, comprising reacting a compound of the formula:



(II)

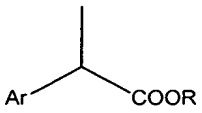
wherein Ar is as described above and R is alkyl with a reducing agent in the presence of alkyl amine to form a compound of the formula:



(III)

wherein Ar and R are as describe above;

hydrogenating the compound of formula (III) to a compound of the formula:



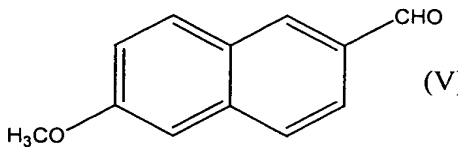
(XII)

wherein Ar is as described above; and

hydrolyzing the compound of formula (XI) to a compound of formula (IV) wherein Ar is as described above.

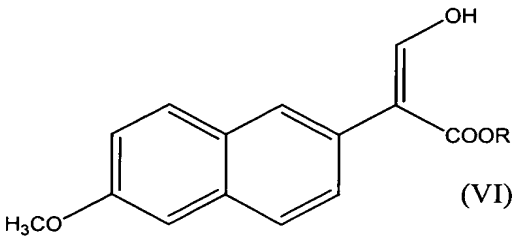
33. (previously presented) The method of claim 31 wherein the Bronsted acid or Lewis acid is HBF_4.

34. (previously presented) A method of producing naproxen and its pharmaceutically acceptable salts comprising: (1) reacting an aldehyde of the formula:



(V)

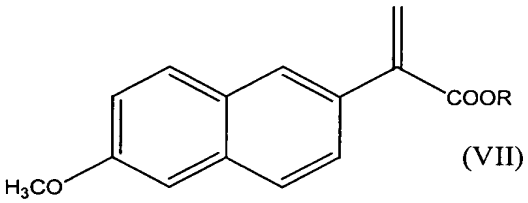
with $N_2CHCOOR$, wherein R is alkyl, in the presence of a Bronsted acid or a Lewis acid to produce a compound of the formula:



(VI)

wherein R is as described above;

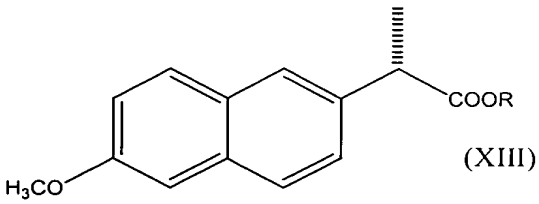
(2) reacting the compound of formula (VI) with a reducing agent in the presence of an alkyl amine to produce a compound of the formula:



(VII)

wherein R is as described above;

(3) hydrogenating the compound of formula (VII) to a compound of the formula:

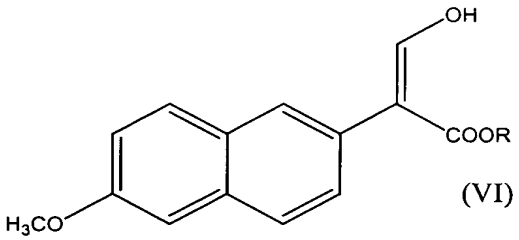


(XIII)

and

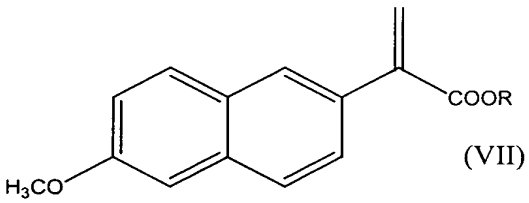
(4) hydrolyzing the compound of formula (XIII) to naproxen or its pharmaceutically acceptable salts.

35. (previously presented) A method of producing naproxen and its pharmaceutically acceptable salts comprising reacting a compound of the formula:



(VI)

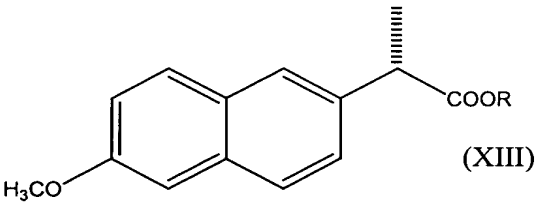
wherein R is alkyl with a reducing agent in the presence of an alkyl amine to produce a compound of the formula:



(VII)

wherein R is as described above;

hydrogenating the compound of formula (VII) to a compound of the formula:



(XIII)

and hydrogenating the compound of formula (XI) to naproxen or its pharmaceutically acceptable salts.

36. (previously presented) The method of claim 34 wherein the Bronsted acid or Lewis acid is HBF_4.